



Nationally, Idaho ranks within the top 10 in **wheat** production, producing over 100 million bushels of **wheat** annually! The leading **wheat** producing county is Bingham, located in eastern Idaho. **Wheat** is grown in most areas of the state. Eastern and northern Idaho have distinct characteristics in terms of **wheat** production. Most of eastern Idaho's **wheat** acres are irrigated, whereas most northern Idaho farmers do not irrigate their **wheat**.

Soft White **Wheat** is the most popular **wheat** grown in Idaho.

This type of **wheat** is used in flat breads, biscuits, cakes, crackers, pastries, Asian-style noodles and snack foods. Hard Red **Wheat** is also grown in Idaho and is used for pan breads, flat breads, hearth breads, Asian noodles, hard rolls, flour, croissants, bagels, hamburger buns, and pizza crust.

Whole grains offer a wide variety of healthy nutrients, such as, fiber, B-vitamins, vitamin E, magnesium, iron, and antioxidants. So start incorporating them into your diet today and give grains the spotlight they deserve!





Wheat Facts

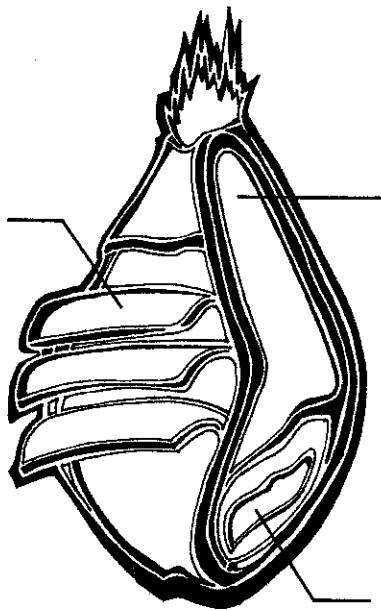
- Idaho's 2001 wheat crop was valued at 279 million dollars.
- The average yield per acre of wheat is 71.0 bushels.
- Idaho wheat growers harvested 1,200,000 acres of wheat in 2001.
- The average price for wheat in 2001 was \$3.30 a bushel.
- Nationally, Idaho ranks number eight for wheat and wheat product exports in 2001.
- Wheat is grown in 42 of the 44 counties in Idaho. Boise and Shoshone counties are the exception.
- Bingham County harvested the most acres of wheat in Idaho in 2001. Nez Perce county ranked second in wheat production.
- There are six classes of wheat; Hard Red Spring, Soft White, Hard Red Winter, Soft Red Winter, Durum, Hard White.
- Soft White Wheat is the most popular wheat grown in Idaho.
- Soft White Wheat is used in flat breads, cakes, biscuits, pastries, crackers, Asian-style noodles and snack foods.
- Hard Red Winter is used in pan breads, Asian noodles, hard rolls, flat breads and general-purpose flour.
- Hard Red Spring is used in pan breads, hearth breads, rolls, croissants, bagels, hamburger buns, pizza crust and used for blending.
- Durum is used in pasta, couscous and some Mediterranean breads.
- Soft Red Winter is used in pastries, cakes, cookies, crackers, pretzels, flat breads.
- Hard White wheat is used in Asian noodles, whole wheat or high extraction flour applications, pan breads and flat breads.



Wheat Trivia

- One bushel of wheat contains about 1 million kernels.
- A single bushel of wheat will make 73 loaves of bread, or 53 boxes of cereal, or 72 pounds of tortillas.
- One acre of wheat can produce enough wheat to furnish your family with bread for nearly 10 years.
- The wheat kernel is made up of three distinct parts. The endosperm is the source of white flour and makes up approximately 83% of the kernel, the bran about 14.5% and germ, approximately 2.5%.
- The wheat kernel, sometimes called the wheat berry, is the seed from which the wheat plant grows.
- Wheat was first planted in the United States in 1777 as a hobby crop.
- Licorice is made from wheat flour.
- More foods are made with wheat than any other cereal grain.
- Farmers receive about 4 cents per loaf of bread when it's sold in the stores.
- It takes a combine only nine seconds to harvest enough wheat to make 70 loaves of bread.
- Wheat is grown in 42 states in the United States.
- The workers who built the pyramids in Egypt were paid in bread.
- The word "grain" was given its name by the Roman goddess, Ceres.
- New uses of wheat include cat litter, wheat concrete, biodegradable spoons and forks, dog treats, soap, shampoo, and biodegradable plastic wrap.
- Evidence indicates that wheat was baked to make bread in 6,700 B.C. by Swiss lake dwellers, that's over 8000 years ago.
- The United States uses over 3 million bushels of wheat each day.
- It takes just 40 days for most Americans to earn enough money to pay for their food supply for the whole year. It takes 129 days for the average American to earn enough money to pay his federal, state, and local taxes for the year.

The Wheat Kernel and Wheat Plant



The **kernel** is the seed from which the wheat plant grows. It's also the part we grind to make flour or semolina. Each tiny kernel contains three parts that are separated during the milling process.

Identify the parts of the wheat kernel with these letters.

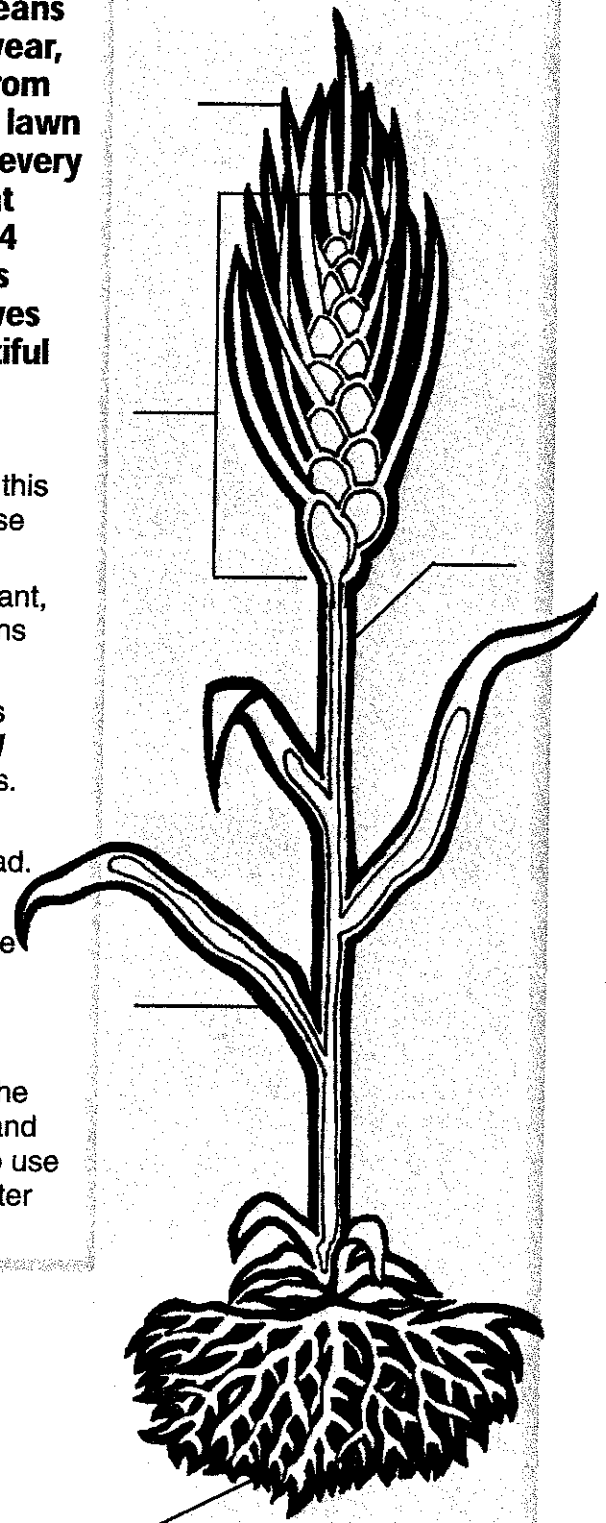
- A **Bran** is the hard outer cover of the seed that is in layers. It is the kernel's "skin."
- B **Germ** is the part of the seed that sprouts and grows into a new plant.
- C **Endosperm** is the biggest part of the kernel (about 83 percent). It is the food source for the sprouting new plant. This part is ground into white flour and semolina. Whole wheat flour includes the endosperm, bran and germ.



Wheat is an annual grass. Annual means it lives only one year, so it's different from the grass in your lawn that grows back every spring. The wheat plant grows 2 to 4 feet high and has long, narrow leaves that turn a beautiful golden color at harvest time.

Identify the parts on this wheat plant with these letters.

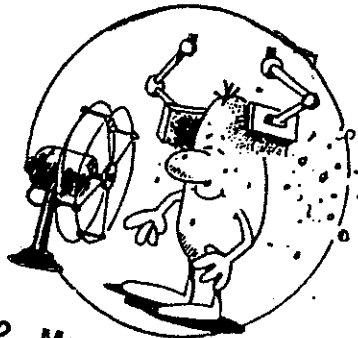
- A On the wheat plant, the **head** contains the kernels.
- B Bristlelike spikes called the **beard** cover the kernels.
- C The **stem** supports the head.
- D The **leaves** use sunshine to make food through the process of photosynthesis.
- E The **roots** hold the plant in the soil and allow the plant to use nutrients and water from the soil.



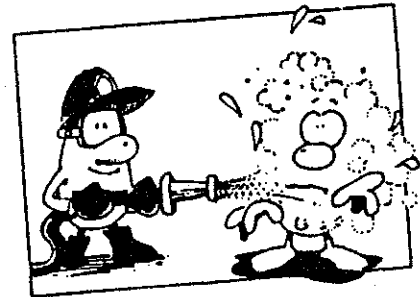
Wheat Processing



1. At the flour mill, the wheat kernels are cleaned to remove dust and pieces of straw.



2. Mechanical cleaners also remove weeds, seeds and other parts of plants.

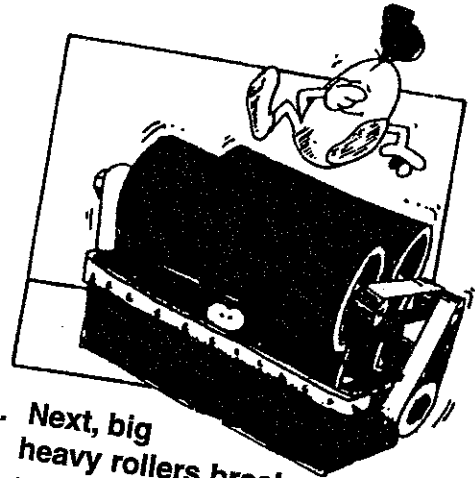


3. Then the kernels are washed in a stream of water to take away stones and dirt.

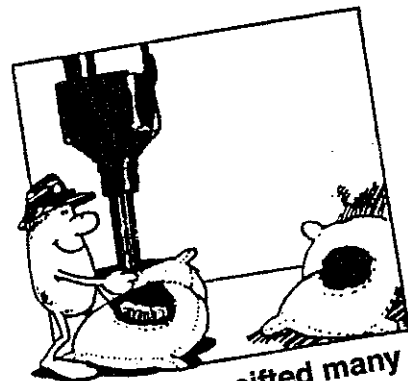
Milling is the process of grinding the wheat into flour or semolina. To make white flour, the bran and germ must be carefully separated from the endosperm.

Gluten is the protein in wheat flour that helps yeast breads stretch when they rise. Gluten works like bubble gum. The gluten traps the air bubbles from the yeast and keeps them in the dough. The tiny holes in a slice of bread are formed by gluten bubbles.

When durum is milled, the product is called **semolina** rather than flour. Semolina resembles fine sand or sugar and is a yellow or amber color. Semolina and water are mixed together to make pasta dough. The dough is kneaded and then forced through dies (metal disks with holes) to create more than 300 pasta shapes. The wet pasta is carefully dried before packaging and shipping. When good quality pasta is cooked in water, it retains its yellow color, its shape and its firmness.



4. Next, big heavy rollers break up the wheat and crush it.



5. It is then sifted many times to give us flour.

Wheat is measured in bushels...

One bushel of wheat has about 1 million kernels and weighs 60 pounds. Is that more or less than you weigh?

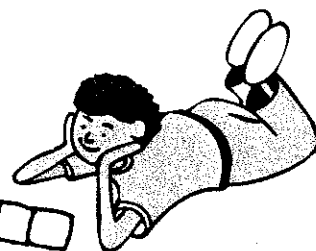


Wheat Consumption

Across

1. A flaky, rich, crescent-shaped roll.
2. A salted snack food shaped like a bow.
3. Hamburgers and hot dogs are served on this bread.
4. A small, round loaf of bread eaten with a meal.
5. Eaten on mashed potatoes, rhymes with navy.
7. A breakfast food with square-shaped dents all over it.
9. Round and flat, this breakfast food is served with syrup.
13. The outer covering of tacos.
14. A baked dish made of layers of broad, flat pasta, cheese, tomatoes and meat.
15. Small pockets of pasta filled with meat or cheese.
17. A breakfast food served in a bowl and covered with milk.
18. A peanut butter and jelly_____.

Wheat Foods Crossword Puzzle



Many delicious foods are made from wheat. Complete this crossword puzzle to name a few of them.

Source: Amazing Wheat Teacher's Guide, Wheat Foods Council and state wheat commissions

Down

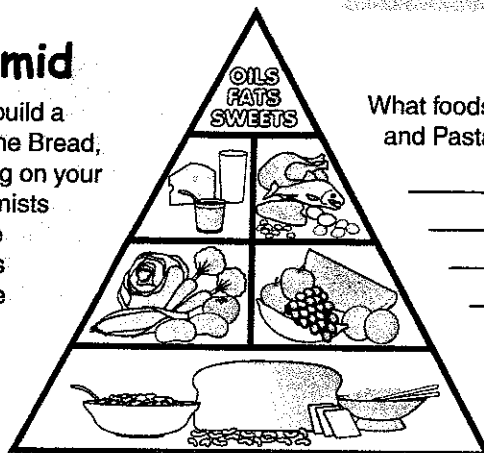
1. A hot, cream-style cereal.
3. A hard, glazed, ring-shaped roll; often spread with cream cheese.
6. A rope candy that is usually red or black.
8. Long, skinny pasta shape often eaten with meatballs.
10. Curved, tubular pasta shape often served with cheese.
11. Long, narrow strips of bread often served with pasta and pizza.
12. Finely-ground wheat kernels used to make bread and other wheat foods.
16. Served toasted for breakfast.

Word Bank

gravy	waffle	macaroni
sandwich	licorice	breadsticks
spaghetti	pancake	lasagna
ravioli	buns	cereal
pretzel	flour	tortilla
bread	bagel	Cream of Wheat
croissant	roll	

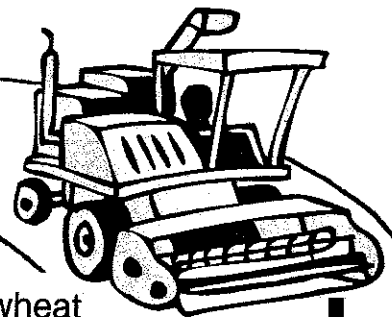
The Food Guide Pyramid

The Food Guide Pyramid shows how to build a healthy diet. The base of the pyramid is the Bread, Cereal, Rice and Pasta Group. Depending on your age, size and how active you are, nutritionists suggest you eat 6 to 11 servings of these foods every day. These grain-based foods provide complex carbohydrates which are the best source of energy for your body. These foods are usually low in fat and provide fiber, vitamins and iron.



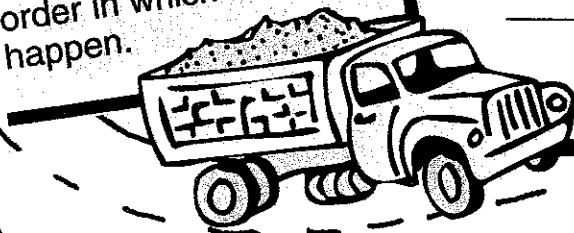
What foods from the Bread, Cereal, Rice and Pasta Group did you eat yesterday?

Wheat Distribution



The Journey of Wheat

Wheat travels through many steps from the farm to your dinner table. Think about wheat production, processing, distribution and consumption to number these steps 1-6 in the order in which they happen.



_____ Elevator sells wheat to a mill or to a foreign country

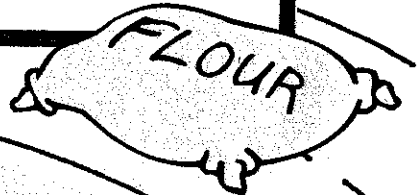
_____ Farmer produces wheat

_____ Bakery or pasta manufacturer packages products to sell at the grocery store

_____ Farmer delivers wheat to the elevator

_____ You buy wheat foods at the grocery store

_____ Mill bags flour to sell at the grocery store or sells flour or semolina to bakery or pasta manufacturer



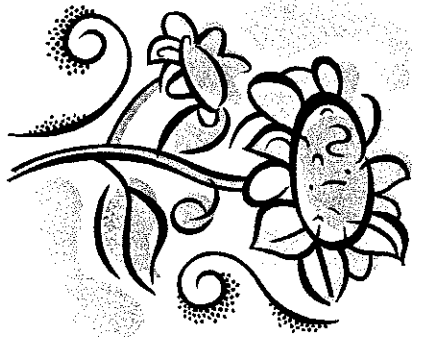
Around the World

About half of North Dakota's wheat is exported to other countries. Children around the world may eat their wheat as different products than what we eat here.

Write the letter of each wheat food's cultural origin on the line before it.

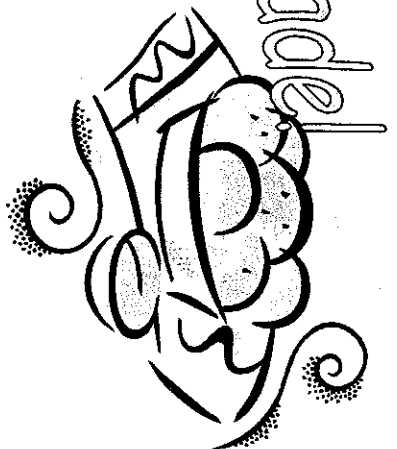
- _____ Matzo
- _____ Pita
- _____ Hamburger Bun
- _____ Tortilla
- _____ Scone
- _____ Wonton
- _____ Croissant
- _____ Spaghetti
- _____ Soda Bread
- _____ Lefse
- _____ Couscous
- _____ Fry Bread

- A. Mexican
- B. Irish
- C. American
- D. Norwegian
- E. Greek
- F. Scottish, English
- G. Chinese
- H. Hebrew
- I. Italian
- J. French
- K. Moroccan
- L. Native American



Don't "grain" on my parade!

Can you find these words? straw, barley, corn, oats, mill, elevator, grain, bread, bran, wheat, silo, flax, soybean, sunflower, rye, chaff, hull, flour



S	A	M	S	T	R	A	W	S	L	A	H	B
C	I	O	L	B	D	B	P	U	X	Y	U	A
S	O	L	P	G	M	V	C	N	R	O	L	R
O	U	A	O	G	S	I	O	F	H	Y	L	L
Y	R	R	T	R	T	C	R	L	E	K	E	E
B	G	G	N	S	M	H	N	O	A	O	G	Y
E	F	L	A	X	S	A	E	W	T	I	U	O
A	M	I	G	L	W	F	K	E	A	B	E	B
N	I	F	R	I	E	F	T	R	E	R	L	R
E	L	F	L	O	U	R	R	P	H	E	J	A
L	L	I	S	U	N	F	L	O	W	A	R	N
L	B	C	R	B	G	R	A	I	N	D	M	E
E	L	E	V	A	T	O	R	B	R	E	T	D





Wheat!



Wheat makes flour!